CLAIMS

1. An information reproducing method using a dot pattern, comprising the steps of:

scanning a medium as image data by scanning means such as a printed material on which is formed a dot pattern portion, which formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm, in order to recognize various kinds of multimedia information;

converting the image data of the dot pattern portion into code data; and

reading multimedia information corresponding to the code data out of storing means to reproduce the multimedia information.

2. The information reproducing method using a dot pattern according to claim 1, wherein the medium is a printed material or a picture and the dot pattern portion is formed so as to recognize voice information corresponding to image of the medium.

3. The information reproducing method using a dot pattern according to claim 1 or 2, wherein the dot pattern portion includes a plurality of areas which are separately printed depending on image of the printed material.

4. The information reproducing method using a dot pattern according to any one of claims 1 to 3, wherein the dot pattern portion is formed on a seal member which can be attached to the printed material or a card.

5. An information reproducing device using a dot pattern comprising:

scanning means for scanning image data of a dot pattern portion formed on a medium such as a printed material, the dot pattern portion being formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm, in order to recognize various kinds of multimedia information, the information reproducing device;

storing means for, after the image data is digitalized into numeric values, storing multimedia information corresponding to the dot pattern portion based on the numeric values; and

outputting means for reproducing the multimedia information of the storing means.

6. An information reproducing device using a dot pattern comprising:

a touch panel including a transparent film on which is formed a dot pattern portion that is formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm, in order to recognize various

kinds of multimedia information;

scanning means for, after the touch panel is set to display means of an electronic device, scanning image data of the dot pattern portion of the touch panel following instruction information displayed on the display means; and

an electronic device for digitalizing the image data into numeric values and reading multimedia information corresponding to the dot pattern portion based on the numeric values out of storing means and reproducing the multimedia information.

7. The information reproducing device using a dot pattern according to claim 6, wherein an infrared cutoff filter is arranged between the touch panel and the display means.

8. The information reproducing device using a dot pattern according to claim 6 or 7, wherein the electronic device is a personal computer.

9. The information reproducing device using a dot pattern according to claim 6 or 7, wherein the electronic device is a PDA (personal digital assistant).

10. The information reproducing device using a dot pattern according to claim 6 or 7, wherein the electronic

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device is a portable phone.

11. An information reproducing device using a dot pattern comprising:

a mouse pad on which is formed a dot pattern portion that is formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm, in order to recognize various kinds of multimedia information;

scanning means which is housed in a case of a coordinate point inputting device in order to capture image data of the dot pattern portion of the mouse pad; and

information processing means for digitalizing the image data into numeric values, reading multimedia information corresponding to the dot pattern portion based on the numeric values out of storing means and outputting the multimedia information.

12. An information reproducing device using a dot pattern comprising:

scanning means housed in a pen type case to capture image data of a dot pattern portion that is formed on a medium surface by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize various kinds of multimedia information;

storing means for, after the image data is digitalized into numeric value, storing multimedia information such as a voice corresponding to a code or x and y coordinates of the numeric values, or a code which is defined in advance based on the x and y coordinates; and

outputting means for outputting the multimedia information stored in the storing means.

13. An information inputting/outputting method by camera inputting comprising the steps of:

printing on one surface of a printed material a dot pattern portion formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize various kinds of multimedia information and an information transfer portion which includes a text, an illustration or the like to be recognized as information content;

capturing by a camera unit only image data of the dot pattern portion in the printed material and digitalizing the image data into numeric values; and

based on the numeric values, outputting information and a program corresponding to the dot pattern portion from a storing portion and executing the information and the program.

14. The information inputting/outputting method by

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camera inputting according to claim 13, wherein the dot pattern portion and the information transfer portion of the text, the illustration or the like are printed on the one surface to be superimposed.

15. The information inputting/outputting method by camera inputting according to claim 13 or 14, wherein the dot pattern portion comprises x and y coordinate information and the x and y coordinate information is associated with description of the information transfer portion.

16. The information inputting/outputting method by camera inputting according to claim 13 or 14, wherein the dot pattern portion comprises code number information and the code number information is associated with content of the information transfer portion.

17. The information inputting/outputting method by camera inputting according to claim 15, wherein the dot pattern portion of the x and y coordinate information and the dot pattern information of the code number information are printed on a flat surface of the printed material.

18. The information inputting/outputting method by camera inputting according to any one of claims 13 to

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17, wherein in the step of capturing image data of the dot pattern portion by a camera unit, the dot pattern portion, which is printed with an ink that absorbs infrared light, is radiated with the infrared light.

19. The information inputting/outputting method by camera inputting according to claim 18, wherein the dot pattern portion is printed with a carbon ink.

20. The information inputting/outputting method by camera inputting according to claim 18, wherein the dot pattern portion is printed with a transparent ink.

21. The information inputting/outputting method according to any one of claims 13 to 18, wherein in the step of capturing image data of the dot pattern portion, the dot pattern portion is radiated with ultraviolet light.

22. A portable information inputting/outputting device using a camera inputting method, comprising:
a camera unit for scanning only image data of a dot pattern portion printed on the printed material, the dot pattern portion formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize various kinds of information and an information transfer portion which

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includes a text, an illustration or the like to be recognized as information content being printed on one surface of the printed material;

an image processing portion for digitalizing the image data into numeric values;

processing means for reading information of a storing portion corresponding to the dot pattern portion based on the numeric values obtained by the image processing portion; and

outputting means for outputting the information read out by the processing means.

23. The portable information inputting/outputting device according to claim 22, further comprising an infrared light emitting portion for radiating the dot pattern portion in the printed material with infrared light.

24. The information portable inputting/outputting device according to claim 22, further comprising an ultraviolet light emitting portion for radiating the dot pattern portion in the printed material with ultraviolet light.

25. The portable information inputting/outputting device according to claim 22, wherein the camera unit is a C-MOS camera.

26. The portable information inputting/outputting device according to claim 22, wherein the camera unit is a CCD camera.

27. The portable information inputting/outputting device according to claim 22, wherein the camera unit is configured separated from the image processing portion, the storing portion, the processing means and the outputting means to carry out transmission via an interface portion.

28. The portable information inputting/outputting device according to claim 22, wherein the camera unit and the image processing portion is configured separated from the storing portion, the processing means and the outputting means to carry out transmission via an interface portion.

29. The portable information inputting/outputting device according to claim 22, further comprising a microphone as an inputting portion.

30. The portable information inputting/outputting device according to claim 22, wherein data of the numeric values of the dot pattern portion input by the camera unit is transmitted to a computer such as a server via

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a communication card.

31. The portable information inputting/outputting device according to claim 22, wherein data of the numeric values of the dot pattern portion input by the camera unit is transmitted to a computer such as a server via a communication card, and information and a program corresponding to the data is received.

32. The portable information inputting/outputting device according to claim 22, further comprising a GPS (global positioning system) unit for inputting position information.

33. The portable information inputting/outputting device according to claim 22, wherein the portable information inputting/outputting device is a portable phone.

34. The portable information inputting/outputting device according to claim 22, wherein the portable phone includes an integrally-configured camera.

35. A portable electronic toy comprising:
a voice storing portion for storing a voice corresponding to a dot pattern portion formed on a medium including a book, a game card, a small article and a toy

so as to recognize the voice;

a camera for capturing image data of the dot pattern portion;

a processing portion for processing the image data captured by the camera and reproducing by a speaker a corresponding voice out of the voice storing portion; and

a case main body for housing the voice storing portion, the speaker and the processing portion.

36. The portable electronic toy according to claim 35, wherein the case main body includes a liquid crystal (LC) display.

37. The portable electronic toy according to claim 35, wherein the dot pattern portion is printed on a versus game card.

38. A portable electronic toy comprising:

imaging means for scanning image of a dot pattern portion formed on a toy such as a figure or the like; and

a processing portion for digitalizing image data scanned by the imaging means into numeric values, reading voice data corresponding to the numeric values from a voice storing portion and outputting the voice data by a speaker.

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39. The portable electronic toy according to claim 38, further comprising lighting means for lighting the dot pattern portion.

40. A figure unit with an information outputting function by camera inputting, including a figure of a given shape, the figure unit comprising:

a camera for scanning only image data of a dot pattern portion printed on a printed material, the dot pattern portion formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize information and an information transfer portion which includes a text, an illustration or the like to be recognized as information content being printed on one surface of the printed material;

an image processing portion for digitalizing the image data into numeric values; and

a processing portion and an outputting portion for outputting and executing information and a program of a storing portion corresponding to the dot pattern portion based on the numeric values processed by the image processing portion.

41. The figure unit by camera inputting according to claim 40, wherein the information and the program are stored by voice in the storing portion using a microphone.

42. The figure unit by camera inputting according to claim 41, wherein the figure is a stuffed toy made by stuffing an elastic material in an outer skin of a predetermined shape.

43. A figure unit with an information outputting function by camera inputting, the figure unit comprising:

a camera unit configured by including in a figure of a given shape a camera for capturing only image data of a dot pattern portion printed on a printed material, the dot pattern portion formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize information and an information transfer portion which includes a text, an illustration or the like to be recognized as information content being printed on one surface of the printed material and an image processing portion digitalizing the image data into numeric values;

an outputting unit including a processing portion and an outputting portion for outputting and executing information and a program of a storing portion corresponding to the dot pattern portion based on the numeric values processed by the image processing portion in the camera unit; and

an interface portion for mediating communication between the camera unit and sand outputting unit.

44. The figure unit according to claim 43, wherein the outputting unit is a general-purpose personal computer.

45. A mouse pad on which is formed a dot pattern portion formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize various kinds of multimedia information.

46. A mouse comprising scanning means for scanning a medium on which is formed a dot pattern portion formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize various kinds of multimedia information.

47. An electronic information device comprising:
    scanning means for scanning a medium surface on which dots are arranged in accordance with a given rule by a dot code generating algorithm in order to recognize various kinds of multimedia information;
    storing means for, after image data of the scanned medium is converted into numeric values, storing multimedia information corresponding to the numeric values; and
    outputting means for reading the multimedia

information stored in the storing means to output the multimedia information,

the scanning means, the storing means and the outputting means being housed in a pen type case.

48. The electronic information device according to claim 47, further comprising inputting means for inputting the multimedia information into the storing means.

49. A tablet on which is formed a dot pattern portion formed by arranging in accordance with a given rule dots generated by a dot code generating algorithm in order to recognize various kinds of multimedia information.

50. A computer executable program for registering a paper icon which has a dot pattern portion formed on a medium and code information associated with the paper icon by using a scanner connected to an information processing device, the program comprising the steps of:

designating a display icon displayed on a display screen;

setting allocation of the paper icon to a ON state by selection on the display screen;

instructing the scanner about scanning processing of the paper icon on the display screen or by a voice data output while the ON state is kept;

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after the scanning processing is performed based on the step of instructing, extracting code information from image data obtained by the scanning processing; and

associating the code information with the display icon designated in the step of designating.

51. The computer executable program according to claim 50, further comprising the steps of:

deleting from the display screen the display icon corresponding to the paper icon registered; and executing a function of the display icon associated with the code information when the paper icon is scanned by the scanner.

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